



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2021-0571; Project Identifier AD-2021-00101-T]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to adopt a new airworthiness directive (AD) for certain The Boeing Company Model 787-8, 787-9, and 787-10 airplanes. This proposed AD was prompted by reports of damage to the thrust reverser (TR) translating sleeve secondary sliders due to contact between the slider and the slider track liner. This damage was only found on TR sleeves installed on certain engines. This proposed AD would require determining the serial number of the TR and performing applicable on-condition actions; or replacing the TR with a serviceable TR. The FAA is proposing this AD to address the unsafe condition on these products.

**DATES:** The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0571.

### **Examining the AD Docket**

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0571; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

**FOR FURTHER INFORMATION CONTACT:** Tak Kobayashi, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3553; email: [takahisa.kobayashi@faa.gov](mailto:takahisa.kobayashi@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Comments Invited**

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include

“Docket No. FAA-2021-0571; Project Identifier AD-2021-00101-T” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

#### **Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Tak Kobayashi, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3553; email: [takahisa.kobayashi@faa.gov](mailto:takahisa.kobayashi@faa.gov). Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

## **Background**

The FAA has received reports of damage to the TR translating sleeve secondary sliders. Gouging damage to the slider end and grooving damage along the length of the slider occurred due to contact between the slider and the slider track liner. This damage was found only on TR sleeves installed on Rolls-Royce engines with mission improvement configuration thrust reversers. This damage, if not addressed, could result in failure of the TR translating sleeve secondary slider and possible detachment of the outer cowl, which could strike the fuselage causing damage to the airplane, and could result in reduced control or performance of the airplane.

## **FAA's Determination**

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

## **Related Service Information under 1 CFR Part 51**

The FAA reviewed Boeing Alert Requirements Bulletin B787-81205-SB780043-00 RB, Issue 001, dated January 15, 2021. This service information specifies procedures for determining the serial number of the TR, and applicable on-condition actions; or replacing the TR with a serviceable TR. On-condition actions include reworking affected TR slider track liners; determining the serial number of the TR translating sleeves; checking to determine if certain TR translating sleeves have been installed on certain TRs; performing a detailed inspection of the secondary sliders of affected TR translating sleeves for cracking, grooving, gouging damage, and any existing repair; performing a dye penetrant inspection on any cracking, grooving or gouging damage, and any existing repair for cracking; and repairing any discrepancy found.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

### **Proposed AD Requirements in this NPRM**

This proposed AD would require accomplishing the actions specified in the service information already described, except for any differences identified as exceptions in the regulatory text of this proposed AD. For information on the procedures and compliance times, see this service information at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0571.

### **Explanation of Requirements Bulletin**

The FAA worked in conjunction with industry, under the Airworthiness Directive Implementation Aviation Rulemaking Committee (AD ARC), to enhance the AD system. One enhancement is a process for annotating which steps in the service information are “required for compliance” (RC) with an AD. Boeing has implemented this RC concept into Boeing service bulletins.

In an effort to further improve the quality of ADs and AD-related Boeing service information, a joint process improvement initiative was worked between the FAA and Boeing. The initiative resulted in the development of a new process in which the service information more clearly identifies the actions needed to address the unsafe condition in the “Accomplishment Instructions.” The new process results in a Boeing Requirements Bulletin, which contains only the actions needed to address the unsafe condition (i.e., only the RC actions).

### **Differences Between this Proposed AD and the Service Information**

The effectivity of Boeing Alert Requirements Bulletin B787-81205-SB780043-00 RB, Issue 001, dated January 15, 2021, includes all Model 787-8, 787-9, and 787-10 airplanes equipped with Rolls-Royce engines. This proposed AD would only require

accomplishing the actions specified in Boeing Alert Requirements Bulletin B787-81205-SB780043-00 RB, Issue 001, dated January 15, 2021, on airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before the effective date of this AD. Airplanes certificated after the effective date of this AD will not be delivered with affected TRs or TR translating sleeves. However, because the affected TRs and TR translating sleeves are rotatable parts, the FAA has determined that these parts could later be installed on airplanes delivered with acceptable parts, thereby subjecting those airplanes to the unsafe condition. This proposed AD would therefore include a parts installation prohibition applicable to all Model 787-8, 787-9, and 787-10 airplanes equipped with Rolls-Royce engines. Furthermore, the FAA has determined that a parts installation prohibition needs to be specified for airplanes on which the corrective actions required by this proposed AD have been accomplished. In general, such a prohibition is not necessary since an airplane that is credited for compliance with an AD requirement must be maintained at the AD-compliant configuration. However, the corrective actions required by this AD are accomplished on the TRs and TR translating sleeves, and those parts can be moved from one airplane to another as part of regular maintenance activities. To prevent inadvertent maintenance where an AD-compliant airplane is re-configured to a non-compliant configuration by installing a TR or TR translating sleeve on which the corrective actions have not been accomplished, this proposed AD would explicitly specify a parts installation prohibition for those airplanes that have complied with an AD requirement.

### **Costs of Compliance**

The FAA estimates that this AD, if adopted as proposed, would affect 14 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

### Estimated costs for required actions

| Action                     | Labor cost                            | Parts cost | Cost per product | Cost on U.S. operators |
|----------------------------|---------------------------------------|------------|------------------|------------------------|
| Serial number inspection   | 6 work-hours X \$85 per hour = \$510  | \$0        | \$510            | Up to \$7,140          |
| Replacement (per T/R half) | 12 work-hours X \$85 per hour \$1,020 | \$0        | \$1,020          | Up to \$14,280         |

The FAA estimates the following costs to do any necessary on-condition repairs, dye-penetrant inspections, TR sleeve serial number checks, or checks to determine if certain TR sleeves have been installed on certain TRs, that would be required. The FAA has no way of determining the number of aircraft that might need these on-condition actions:

### Estimated costs of on-condition actions

| Action  | Labor cost   | Parts cost | Cost per product |
|---|--|------------|------------------|
| Repair  | Up to 100 work-hours X \$85 per hour = Up to \$8,500 | \$0        | Up to \$8,500    |
| Dye-penetrant inspection  | Up to 4 work-hours X \$85 per hour = Up to \$340     | \$0        | Up to \$340      |
| TR sleeve serial number check   | 1 work-hour X \$85 per hour = \$85                   | \$0        | \$85             |
| Check to determine if TR translating sleeve has been installed on certain TRs | 1 work-hour X \$85 per hour = \$85                   | \$0        | \$85             |

The FAA has received no definitive data on which to base the cost estimates for the on-condition rework and detailed inspections specified in this proposed AD.

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some or all of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected operators.

## **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.



## **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**The Boeing Company:** Docket No. FAA-2021-0571; Project Identifier

AD-2021-00101-T.

#### **(a) Comments Due Date**

The FAA must receive comments on this airworthiness directive (AD) by  
[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL  
REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to The Boeing Company Model 787-8, 787-9, and 787-10 airplanes, certificated in any category, powered by Rolls-Royce Trent 1000 engines.

#### **(d) Subject**

Air Transport Association (ATA) of America Code 78, Thrust Reverser.

#### **(e) Unsafe Condition**

This AD was prompted by reports of damage to the thrust reverser (TR) translating sleeve secondary sliders due to contact between the slider and the slider track liner. This damage was only found on TR sleeves installed on certain engines. The FAA is issuing this AD to address this damage, which could result in failure of the TR translating sleeve secondary slider and possible detachment of the outer cowl, which

could strike the fuselage, causing damage to the airplane, and could result in reduced control or performance of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before the effective date of this AD: Except as specified by paragraph (h) of this AD; at the applicable times specified in the “Compliance” paragraph of Boeing Alert Requirements Bulletin B787-81205-SB780043-00 RB, Issue 001, dated January 15, 2021, do all applicable actions for Group 1, Configuration 1 airplanes as identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin B787-81205-SB780043-00 RB, Issue 001, dated January 15, 2021.

Note 1 to paragraph (g): Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin B787-81205-SB780043-00, Issue 001, dated January 15, 2021, which is referred to in Boeing Alert Requirements Bulletin B787-81205-SB780043-00 RB, Issue 001, dated January 15, 2021.

**(h) Exceptions to Service Information Specifications**

(1) Where Boeing Alert Requirements Bulletin B787-81205-SB780043-00 RB, Issue 001, dated January 15, 2021, uses the phrase “the issue 001 date of Requirements Bulletin B787-81205-SB780043-00 RB,” this AD requires using “the effective date of this AD.”

(2) Where Boeing Alert Requirements Bulletin B787-81205-SB780043-00 RB, Issue 001, dated January 15, 2021, specifies contacting Boeing for repair instructions or for instructions to address certain conditions: This AD requires doing the repair or doing

the instructions using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

**(i) Parts Installation Limitations**

(1) As of the applicable compliance time specified in paragraph (i)(1)(i) or (ii) of this AD, no person may install on any airplane a TR with serial number between 00110001 and 00312001 inclusive, on which all applicable inspections and corrective actions required by paragraph (g) of this AD have not been accomplished.

(i) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before the effective date of this AD: After accomplishing the actions required by paragraph (g) of this AD.

(ii) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued after the effective date of this AD: As of the effective date of this AD.

(2) As of the applicable compliance time specified in paragraph (i)(2)(i) or (ii) of this AD, no person may install on any airplane a TR translating sleeve with serial number 00125001 and subsequent, on which all applicable inspections and corrective actions required by paragraph (g) of this AD have not been accomplished.

(i) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before the effective date of this AD: After accomplishing the actions required by paragraph (g) of this AD.

(ii) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued after the effective date of this AD: As of the effective date of this AD.

(3) As of the effective date of this AD, no person may install a TR translating sleeve that was originally installed on any airplane with an original airworthiness certificate or original export certificate of airworthiness issued after the effective date of

this AD; or a TR translating sleeve with serial number 00125001 and subsequent, on which all applicable inspections and corrective actions specified in Boeing Alert Requirements Bulletin B787-81205-SB780043-00 RB, Issue 001, dated January 15, 2021, have been accomplished; on any airplane with a TR with a serial number between 00110001 and 00312001 inclusive, unless all applicable inspections and corrective actions specified in Boeing Alert Requirements Bulletin B787-81205-SB780043-00 RB, Issue 001, dated January 15, 2021, have been accomplished on that TR, except as specified in paragraph (h)(2) of this AD.

**(j) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in Related Information. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

**(k) Related Information**

(1) For more information about this AD, contact Tak Kobayashi, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3553; email: takahisa.kobayashi@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Issued on July 13, 2021.

Lance T. Gant, Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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